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DISCUSSES THERAPEUTIC APPLICATION OF SOLUTIONS OF PENCILLIN IN KAMPOLON

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USSR investigators have proposed many methods of introducing penicillin which permit a reduction of the number of injections to a minimum without, at the same time, lowering the concentration of the antibiotic in the blood. Some of these methods /introduction of penicillin together with pyramidon, so that the latter lowers the permeability of capillaries; intramuscular injection of penicillin together with colloids, i.e. blood, erythrocytic mass, or dried plasma; subcutaneous injection of penicillin into an area of tissue hemorrhage induced 24 hours before by cupping/, which were described in Meditinskii Rabotnik, 29 March 1951, have such a definite advantage, that the introduction of penicillin in an aqueous solution is gradually being abandoned. However, persistent preparations of this type have certain serious drawbacks; they may produce complications, induce sharp painfulness after the injection, cause infiltrations and occasionally even sterile abscess at the site of the injection.

For these reasons, the Moscow Oblast Scientific Research Clinical Institute imeni M. F. Vladimirovskiy suggested that penicillin be dissolved in kampilon to prolong the antibiotic's action. As distinguished from other substances added to confer persistence, kampilon when used as a solvent does not by itself induce any serious side effects. Due to its content of biologically active substances, this solvent for penicillin stimulates the reactive capacity of the organism.

Kampolon contains a large quantity of amino acids and vitamins of the B₁ group. It may be assumed that it also contains other active substances which have not yet been isolated and which exert a therapeutic effect. According to data obtained by USSR investigators, kampolon has a stimulating and regulating effect on hemopoiesis, exhibits an antitoxic action, increases the quantity of glycose in the liver, and induces storage of glycogen.

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In connection with the presence of protein in kampolon, one may assume that a penicillin-protein complex is formed in the solution. On intramuscular injection penicillin is slowly resorbed from such a compound and slowly eliminated by the kidneys.

A determination of the concentration of penicillin in blood after a single intramuscular injection of 200,000-400,000 units dissolved in kampolon disclosed that an average therapeutic concentration of penicillin equal to 0.06-0.5 per milliliter of blood is retained for 12 or even 24 hours after the injection. The solution of penicillin in kampolon was tested at the Dermatological Clinic of the Moscow Oblast Clinical Institute, at the Moscow Oblast Dermatological-Venerological Dispensary, and at several rayon dispensaries of Moscow Oblast. A 2-milliliter ampule of kampolon is sufficient to dissolve 300,000-400,000 units of penicillin.

The technique of preparing the solution is simple. First the hypodermic syringe is filled with 2 milliliters of kampolon from the ampule. On removing the rubber stopper from the vial with penicillin, the kampolon is allowed to flow slowly (so that no foam will be formed) into the container along its walls. A well-purified penicillin preparation then dissolves rapidly and completely. Crystalline penicillin dissolves more slowly.

Our investigations and clinical observations have shown that a solution of penicillin in kampolon answers all requirements for a persistent preparation used in therapy. Although the action of penicillin will be prolonged, the high therapeutic qualities of kampolon itself probably will not be displayed as a result of a single application. However, by virtue of possessing these therapeutic properties, kampolon may be expected to stimulate the reactive capacity of the organism and thereby influence the course of the pathologic processes in chronic infections whenever treatment with penicillin is carried out for long periods of time.

A solution of penicillin in kampolon is in no way less effective than an aqueous solution of this antibiotic introduced parenterally. However, parenteral introduction of penicillin dissolved in kampolon permits one to reduce the number of injections considerably: one to four injections are required instead of 8-16, and in some diseases 10-20 instead of 100.

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